

# List of Contents

## NUMBER 1

	i	Softstrip data strips containing the table of contents
<b>Peter R. Bono</b>	1	Introduction by the Associate Editor
<b>Eugene Fiume</b>	3	<i>Computers &amp; Graphics</i> Best Paper Award (1986-1988) for "Bit-mapped graphics: A semantics and theory"
		<i>Technical Section</i>
<b>I. Navazo</b>	5	Extended Octtree representation of general solids with plane faces: Model structure and algorithms
<b>Cathy Sobhanpanah</b>	17	Extension of a boundary representation technique for the description of $N$ dimensional polytopes
<b>C. B. Millham and J. L. Zheng</b>	25	A linear pivoting heuristic procedure for computing the curve of intersection of two bicubic surface patches
<b>R. Cossu, M. Ercoli and L. Molledo</b>	39	An extension of CGI functions for generation and manipulation of raster images
<b>Javier Sanchez-Reyes</b>	49	Laser printers for rendering surfaces
		<i>Chaos and Graphics</i>
<b>Clifford A. Pickover</b>	55	The new "Chaos and Graphics" section of <i>Computers &amp; Graphics</i>
<b>Akhlesh Lakhtakia</b>	57	A simple gasket derived from prime numbers
<b>Akhlesh Lakhtakia and Russell Messier</b>	59	Self-similar sequences and chaos from Gauss sums
<b>Clifford A. Pickover</b>	63	Circles which kiss: A note on osculatory packing
		<i>Eurographics '88 Award Papers</i>
<b>Gregor Lux-Mülders</b>	69	Eurographics '88 Conference
<b>Maarten J. G. M. van Emmerik</b>	71	Creation and modification of parametrized solid models by graphical interaction
<b>Xavier Pintado and Eugene Fiume</b>	77	Grafields: Field-directed dynamic splines for interactive motion control
<b>Mel Slater, Allan Davison and Mark Smith</b>	83	Liberation from rectangles: A tiling method for dynamic modification of objects on raster displays
		<i>Short Technical Notes/Technical Forum/Systems</i>
<b>Jürgen Bettels, Peter R. Bono, Eileen McGinnis and Joachim Rix</b>	91	Guidelines for determining when to use GKS and when to use PHIGS

<b>A. Arokiasamy</b>	99	Homogeneous coordinates and the principle of duality in two dimensional clipping
		<i>Software Survey Section</i>
<b>Michael S. Youngblood</b>	101	AT&T's Image Capture Board (ICB) and TIPS software
		<i>Computer Graphics &amp; Education</i>
<b>J. B. Cummings</b>	111	Computers, the cutting edge of learning
<b>Harold J. McWhinnie</b>	115	Development of visual languages with interactive video disks
		<i>Graphics Art</i>
<b>Mieczyslaw Szyszkowicz</b>	119	Images of nonlinearity
<b>Mieczyslaw Szyszkowicz</b>	121	Computer graphics generated by numerical iteration
		<i>News and Views</i>
<b>Kenvin Lyman</b>	127	An elegant merging
		<i>Announcements</i>
<b>Jan van den Bos</b>	129	Pictorial information systems: Call for papers (revised dates)
	130	<i>Computers &amp; Graphics</i> schedule, special issues
	130	Eurographics '89, Hamburg, FRG
	131	<i>Erratum</i>
	I	Software survey section
 <b>NUMBER 2</b>		
	i	Softstrip data strips containing the table of contents
		<i>3D Voxel-Based Graphics</i>
<b>Arie Kaufman</b>	133	Guest Editor's introduction: 3D voxel-based graphics
<b>Daniel Geist and Michael W. Vannier</b>	135	PC-based 3-D reconstruction of medical images
<b>G. J. Jense and D. P. Huijsmans</b>	145	Interactive voxel-based graphics for 3D reconstruction of biological structures
<b>Reuven Bakalash and Arie Kaufman</b>	151	MediCube: A 3D medical imaging architecture
<b>T. Y. Kong</b>	159	A digital fundamental group
		<i>Technical Section</i>
<b>Avraham Margalit and Gary D. Knott</b>	167	An algorithm for computing the union, intersection or difference of two polygons
<b>Jeffrey Shallit and Jorge Stoifi</b>	185	Two methods for generating fractals

<b>L. Alvisi and G. Casciola</b>	193	On the Two Array Mask hidden-line algorithm
<b>Theoharis Theoharis and Ian Page</b>	207	Polygon rendering on a dual-paradigm parallel processor
<b>L. Piegl</b>	217	A negative experiment with univariate blending functions
<b>H. Ruder, T. Ertl, F. Geyer, H. Herold and U. Kraus</b>	223	Line-of-sight integration: A powerful tool for visualization of three-dimensional scalar fields
<b>Jacques Weber, Pierre-Yves Morgantini, Peter Fluekiger and Michel Roch</b>	229	Molecular graphics modeling of organometallic reactivity
		<i>Computer Graphics &amp; Education</i>
<b>Luiz Ary Messina, Annelore Buhmann, Marion Günther and Georg Köberle</b>	237	Teachware development for education in CAD
		<i>News and Views</i>
<b>Carlo E. Vandoni</b>	243	Development of a large graphics-based application package
		<i>Chaos and Graphics</i>
<b>Sherri Shepard and Andrew Simoson</b>	253	Scouts in hyperspace
<b>T. Richards</b>	261	Graphical representation of pseudorandom sequences
<b>M. Michelitsch and O. E. Rössler</b>	263	A new feature in Hénon's map
<b>Alan Norton</b>	267	Julia sets in the quaternions
		<i>Book Reviews</i>
<b>Jan van den Bos</b>	279	<i>GKS Theory and Practice</i> , edited by P. R. Bono and I. Herman; and <i>Computer Graphics Software Construction</i> , by J. R. Rankin
		<i>Announcements</i>
	281	The role of Hungarians in the scientific and technological progress of the world—II. Scientific Meeting, Budapest, Hungary
	282	HCI International '89, Boston, MA, USA
	283	Eurointegrate '89, Hamburg, FRG
	285	<i>Computers &amp; Graphics</i> schedule, special issues
	285	Eurographics '89, Hamburg, FRG
	I	Software Survey Section

## NUMBER 3

	i	Softstrip data strips containing the table of contents
		<i>Computer Graphics in Canada</i>
<b>Günther F. Schrack</b>	287	Guest Editor's introduction Computer graphics in Canada: Past and present
<b>Deborah R. Fowler, James Hanan and Przemyslaw Prusinkiewicz</b>	291	Modelling spiral phyllotaxis
<b>Timothy C. Lethbridge and Colin Ware</b>	297	A simple heuristically-based method for expressive Stimulus-Response animation
<b>Gavin Miller and Andrew Pearce</b>	305	Globular dynamics: A connected particle system for animating viscous fluids
<b>B. Sinclair, A. G. Hannam, A. A. Lowe and W. W. Wood</b>	311	Complex contour organization for surface reconstruction
<b>Eugene Fiume</b>	321	Active objects in the construction of graphical user interfaces
<b>Michel P. Devine and Derick Wood</b>	329	<i>SEPARATION<sup>TM</sup></i> in $d$ dimensions or strip mining in asteroid fields
<b>I. Gargantini, G. Schrack and H. H. Atkinson</b>	337	Adaptive display of linear octrees
<b>Steve Falk</b>	345	Three-dimensional modelling and Piero della Francesca's use of linear perspective
		<i>Technical Section</i>
<b>Martin Roche</b>	349	Defining a faceted generalized cylinder by projections of cross sections
<b>Itzhak Wilf and Yehuda Manor</b>	355	Tracking parameterized algebraic curves on raster displays
<b>Günter Aumann</b>	361	Approximate development of skew ruled surfaces
<b>C. Guerrini and G. Spaletta</b>	367	An image reconstruction algorithm in tomography: A version for the CRAY X-MP vector computer
<b>Varol Akman and Wm. Randolph Franklin</b>	373	Representing objects as rays, or how to pile up an octree?
		<i>News and Views</i>
<b>Pedro Faria Lopes and Mário Rui Gomes</b>	381	Computer animation in Portugal
		<i>Chaos and Graphics</i>
<b>Ian D. Entwistle</b>	389	Julia set art and fractals in the complex plane

<b>Michael Keith</b>	393	Artistic choice in the display of chaotic dynamics
<b>Harry Seldom</b>	397	Iteration as a creative process in visual art
		<i>Announcements</i>
<b>Jürgen Schönhut</b>	399	Call for papers
<b>Carlo E. Vandoni</b>	400	Call for Eurographics membership
	402	Eurographics membership application forms
	i	Software Survey Section

## NUMBER 4

	j	Softstrip data strips containing the table of contents
<b>José L. Encarnação</b>	407	Editor-in-Chief's introduction
		<i>Technical Section</i>
<b>Peter van Oosterom and Jan van den Bos</b>	409	An Object-Oriented approach to the design of Geographic Information Systems
<b>Andrew Hunter and Philip J. Willis</b>	419	Breadth-first quad encoding for networked picture browsing
<b>Charles X. Durand</b>	433	Bit map transformations in computerized 2D animation
<b>Jack Bryant and Clifford Krumvieda</b>	441	Display of discrete 3D binary objects: I—Shading
<b>Hanan Samet</b>	445	Implementing ray tracing with octrees and neighbor finding
<b>Paul G. Bao and Jon G. Rokne</b>	461	Quadruple-step line generation
<b>Binh Pham</b>	471	Quadratic B-splines for automatic curve and surface fitting
<b>Shin-Ting Wu</b>	477	A new combinatorial model for boundary representations
<b>Marshall Walker</b>	487	Boolean operations with enriched octree structures
<b>F. Major, J. Malenfant and N. F. Stewart</b>	497	Distance between objects represented by octrees defined in different coordinate systems
<b>Uday G. Gujar and I. V. Nagendra</b>	505	Construction of 3D solid objects from orthographic views
		<i>Computer Graphics &amp; Education</i>
<b>A. Buhmann, M. Günther and G. Köberle</b>	523	Computer graphics as a tool in training and education: A COMETT project

		<i>News and Views</i>
<b>J. R. Woodwark</b>	529	Comments on "extended octrees"
		<i>Chaos and Graphics</i>
<b>Wentian Li</b>	531	Complex patterns generated by next nearest neighbors cellular automata
<b>Stephen T. Welstead and Thomas L. Cromer</b>	539	Coloring periodicities of two-dimensional mappings
<b>S. R. Ramesh</b>	545	Graphics of truncated sinusoids
<b>Ian D. Entwistle</b>	549	Methods of displaying the behaviour of the mapping $z \rightarrow z^2 + \mu$
<b>Mario Markus and Benno Hess</b>	553	Lyapunov exponents of the logistic map with periodic forcing
<b>Peter D. Fortescue and Geoffrey S. Puterbaugh</b>	559	A note on the practical use of the VGA monitor for the display of fractal images
		<i>Short Technical Notes/Tutorials/Systems</i>
<b>P. C. Mathias, L. M. Patnaik and Sudha Ramesh</b>	561	Systolic architectures in curve generation
		<i>Graphics &amp; Art</i>
<b>Samuel D. Huang, Raul Lopez and Jan Siemieniowski</b>	571	The discovery of hidden facial images in the paintings of Vincent Van Gogh and Paul Gauguin by using computer graphics enhancement techniques
		<i>Announcements</i>
	579	Eurographics '90—Call for participation
	582	Eurographics workshop on object oriented graphics—First call for contributions
<b>Chandra S. Desai</b>	583	Announcement and call for papers
	I	Volume 13 list of contents and author index
	XI	Software Survey Section



